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CLAIMS

What is claimed is:

1. An isolated nucleic acid molecule selected from the group consisting of:

a) an isolated find the sequence immunog hTNFα:

an isolated nucleic acid molecule which hybridizes under conditions of high stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2, wherein said isolated nucleic acid molecule, when expressed-with-a-molecule-having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα;

- b) an isolated nucleic acid molecule which hybridizes under conditions of high stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα; and
- c) a complement of an isolated nucleic acid molecule of a) or b).
- 2. An isolated nucleic acid molecule selected from the group consisting of:
- a) an isolated nucleic acid molecule which hybridizes under conditions of high stringency to DNA having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds to hTNFα; and

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- an isolated nucleic acid molecule which hybridizes under conditions of high stringency to DNA having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds to hTNFα.
- 3. An isolated nucleic acid molecule selected from the group consisting of:
 - an-isolated-nucleic-acid-molecule-which, when-expressed-with-a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin-constant region, encodes a polypeptide which binds to hTNFα, wherein said nucleic acid molecule hybridizes under conditions of moderate stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4;
 - b) an isolated nucleic acid molecule which, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds to hTNFα, wherein said nucleic acid molecule hybridizes under conditions of moderate stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2; and
 - c) a complement of an isolated nucleic acid molecule of a) or b).
- 4. An isolated nucleic acid molecule selected from the group consisting of:
 - a) an isolated nucleic acid molecule which, when expressed with a molecule encoding a polypeptide comprising the amino acid sequence of SEQ ID NO: 5 and a gene encoding an IgG1 immunoglobulin constant

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- region, encodes a polypeptide comprising the amino acid sequence of SEQ ID NO: 3, or a fragment thereof, which binds hTNF α ;
- b) an isolated nucleic acid molecule which, when expressed with a molecule encoding a polypeptide comprising the amino acid sequence of SEQ ID NO: 3 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide comprising the amino acid sequence of SEQ ID NO: 5, or a fragment thereof, which binds hTNFα; and
- a complement of the isolated nucleic acid molecule of a) or b). c)
- 5. An isolated nucleic acid molecule comprising a sequence selected from the 10 group consisting of:
 - a) SEQ ID NO: 2;
 - b) the complementary strand of SEQ ID NO: 2;
 - c) DNA sequences that hybridize under conditions of high stringency to the complementary sequence of SEQ ID NO: 2, and which, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encode a polypeptide which binds hTNFα; and
 - RNA sequences transcribed from the sequences of a), b), or c). d)
- 6. An isolated nucleic acid molecule comprising a sequence selected from the 20 group consisting of:
 - SEQ ID NO: 4; a)
 - b) the complementary strand of SEQ ID NO: 4;
 - c) DNA sequences that hybridize under conditions of high stringency to the complementary sequence of SEQ ID NO: 4, and which, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encode a polypeptide which binds hTNFα; and

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- d) RNA sequences transcribed from the sequences of a), b), or c).
- 7. An expression vector comprising the nucleic acid molecule according to Claim 1.
- 8. An expression vector comprising the nucleic acid molecule according to Claim 5 2.
 - 9. An-expression-vector-comprising-the-nucleic acid-molecule-according-to-Claim-3.
 - 10. An expression vector comprising the nucleic acid molecule according to Claim 4.
- 10 11. An expression vector comprising the nucleic acid molecule according to Claim 5.
 - 12. An expression vector comprising the nucleic acid molecule according to Claim 6.
 - 13. An isolated nucleic acid molecule selected from the group consisting of:
- 15 a) an isolated nucleic acid molecule which hybridizes to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2 under wash conditions of wash solution of 68° C 0.1x SSC/0.1% SDS and incubation with rotation for 15 minutes at 68° C, wherein said isolated nucleic acid molecule, when expressed with a 20 molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFa;

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- b) an isolated nucleic acid molecule which hybridizes to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4 under wash conditions of wash solution of 68° C 0.1x SSC/0.1% SDS and incubation with rotation for 15 minutes at 68° C, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα; and
- c) a complement of an isolated nucleic acid molecule of a) or b):
- 10 14. An isolated nucleic acid molecule selected from the group consisting of:
 - an isolated nucleic acid molecule which hybridizes to DNA having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2 under wash conditions of wash solution of 68° C 0.1x SSC/0.1% SDS and incubation with rotation for 15 minutes at 68° C, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα;
 - b) an isolated nucleic acid molecule which hybridizes to DNA having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4 under wash conditions of wash solution of 68° C 0.1x SSC/0.1% SDS, and incubation with rotation for 15 minutes at 68° C, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα; and
 - c) a complement of an isolated nucleic acid molecule of a) or b).

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- 15. An isolated nucleic acid molecule selected from the group consisting of:
 - an isolated nucleic acid molecule which, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα, wherein said nucleic acid molecule hybridizes to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4 under wash conditions of wash solution of 42° C 0.2x SSC/0.1% SDS and incubation with rotation for 15 minutes at 42°-C;
- an isolated nucleic acid molecule which, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds hTNFα, wherein said nucleic acid molecule hybridizes to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2 under wash conditions of wash solution of 42° C 0.2x SSC/0.1% SDS and incubation with rotation for 15 minutes at 42° C; and
 - c) a complement of an isolated nucleic acid molecule of a) or b).
- 16. An isolated nucleic acid molecule comprising a DNA sequence that hybridizes to the complementary sequence of SEQ ID NO: 2 under wash conditions of wash solution of 68° C 0.1x SSC/0.1% SDS and incubation with rotation for 15 minutes at 68° C, said molecule, when expressed with a molecule having the sequence of SEQ ID-NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encoding a polypeptide which binds hTNFα, or an RNA

sequence transcribed from the DNA sequence

17. An isolated nucleic acid molecule comprising a DNA sequence that hybridizes to the complementary sequence of SEQ ID NO: 4 under wash conditions of

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wash solution of 68° C 0.1x SSC/0.1% SDS and incubation with rotation for 15 minutes at 68° C, said molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encoding a polypeptide which binds hTNFα, or an RNA sequence transcribed from the DNA sequence.

18. An isolated nucleic acid molecule selected from the group consisting of:

- an isolated nucleic acid molecule which hybridizes under conditions of high-stringency-to-a-nucleic-acid-molecule-having-the-complementary sequence of the nucleotide sequence of SEQ ID NO: 2, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds and inhibits hTNFα;
- b) an isolated nucleic acid molecule which hybridizes under conditions of high stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds and inhibits hTNFα; and
- c) a complement of an isolated nucleic acid molecule of a) or b).
- 19. An isolated nucleic acid molecule selected from the group consisting of:
- a) an isolated nucleic acid molecule which hybridizes under conditions of high stringency.to.DNA having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ

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ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds and inhibits hTNFα; and

- an isolated nucleic acid molecule which hybridizes under conditions of high stringency to DNA having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4, wherein said isolated nucleic acid molecule, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds and inhibits hTNFα.
- 20. An isolated nucleic acid molecule selected from the group consisting of:
 - a) an isolated nucleic acid molecule which, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds and inhibits hTNFa, wherein said nucleic acid molecule hybridizes under conditions of moderate stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 4;
 - b) an isolated nucleic acid molecule which, when expressed with a molecule having the sequence of SEQ ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide which binds and inhibits hTNFα, wherein said nucleic acid molecule hybridizes under conditions of moderate stringency to a nucleic acid molecule having the complementary sequence of the nucleotide sequence of SEQ ID NO: 2; and
 - c) a complement of an isolated nucleic acid molecule of a) or b).
- 25 21. An isolated nucleic acid molecule selected from the group consisting of:
 - a) an isolated nucleic acid molecule which, when expressed with a molecule encoding a polypeptide comprising the amino acid sequence of

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SEQ ID NO: 5 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide comprising the amino acid sequence of SEQ ID NO: 3, or a fragment thereof, which binds and inhibits hTNFα;

- b) an isolated nucleic acid molecule which, when expressed with a molecule encoding a polypeptide comprising the amino acid sequence of SEQ ID NO: 3 and a gene encoding an IgG1 immunoglobulin constant region, encodes a polypeptide comprising the amino acid sequence of SEQ ID NO: 5, or a fragment thereof, which binds and inhibits $hTNF\alpha$: and
- 10 c) a complement of the isolated nucleic acid molecule of a) or b).
 - 22. An isolated nucleic acid molecule comprising a sequence selected from the group consisting of:
 - SEQ ID NO: 2; a)
 - the complementary strand of SEQ ID NO: 2;
- DNA sequences that hybridize under conditions of high stringency to the complementary sequence of SEQ ID NO: 2, and which, when expressed with a molecule having the sequence of SEO ID NO: 4 and a gene encoding an IgG1 immunoglobulin constant region, encode a polypeptide which binds and inhibits hTNFα; and
- 20 d) RNA sequences transcribed from the sequences of a), b) or c).
 - 23. An isolated nucleic acid molecule comprising a sequence selected from the group consisting of:
 - a) SEQ ID NO: 4;
 - b) the complementary strand of SEQ ID NO: 4;
- 25 DNA sequences that hybridize under conditions of high stringency to the c) complementary sequence of SEQ ID NO: 4, and which, when expressed with a molecule having the sequence of SEQ ID NO: 2 and a gene

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encoding an IgG1 immunoglobulin constant region, encode a polypeptide which binds and inhibits $hTNF\alpha$; and

d) RNA sequences transcribed from the sequences of a), b) or c).